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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TYLER, CHERYL JACKSON

ART UNIT PAPER NUMBER

3746

DATE MAILED: 12/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/089,268

Applicant(s)

SCHWARZKOPF, OTFRIED

Examiner

Cheryl J. Tyler

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7. 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the counter-ring that forms an integral part of the housing (claim 1, lines 8-9); the counter-ring formed in one piece with the cover plate (claim 2, lines 4-5) and the counter-ring being provided with a groove (claims 4 and 6, line 2) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities:

- References to the claims should be deleted. See, at least, page 3, line 15 and page 6, line 2.
- The recitation of "a many as" (page 7, line 6) is presumed to be --as many as--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 2 and 5-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Figure 2, which purportedly teaches the present invention, shows one counter ring that is integral with the cover plate of a compressor. Neither the disclosure or the Figures disclose a compressor having a counter-ring that is integral with both the housing and the cover plate, as required by claim 2. Thus, it is not clear as to what the applicant is claiming as his invention. Since the claims are too ambiguous in scope, no prior art could reasonably be applied to the claim. However, this is not to be a presumed indication of allowable subject matter.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 4 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the relationship of the groove to the counter-ring. As claimed, it is not clear where the groove is

disposed. That is, is the groove on an edge of the counter-ring? On a surface of the counter-ring? On the periphery of the counter-ring? Or some other configuration?

Further, as mentioned previously, this groove is not illustrated in the drawings.

Claim Objections

8. Claims 1-6 are objected to because of the following informalities:

- Claim 1 recites the limitation "Axial piston compressor, in particular CO₂ axial piston compressor," in lines 1-2 of the claim, which is a broad range/narrow range limitation that renders the claim indefinite. This objection may be obviated by reciting either -- An axial piston compressor-- or A CO₂ axial piston compressor--.
- The recitation of "the two components drive shaft (12) and housing (10)" (claim 1, lines 6-7) is somewhat unclear in context. It is presumed that the applicant means --the drive shaft (12) and housing (10)--, and for the purposes of this Office Action, the Examiner has relied on this interpretation.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Ploeger (1,841,298). Ploeger teaches a shaft seal for compressors. The compressor includes a wall 10 (corresponding to the claimed housing) indicated as "a section of the wall of a compressor crank case or of any other piece of machinery in connection with which it is desired to employ a shaft seal" (column 1, lines 37-39) and having an exit aperture (unnumbered, but clearly illustrated in the Figure); a crankshaft 14 that projects out of the housing; and an axial face seal which a bearing ring 25 (corresponding to the claimed sliding ring) and a plate 26 (corresponding to the claimed counter-ring) that produces a seal between the drive shaft and the housing. As illustrated in the Figure, the plate 26 forms an integral part of the wall, and the stepped portion of the plate constitutes a groove in the counter-ring.

11. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Washida (JP 59-226765). Washida teaches a housing 1 having an exit aperture (unnumbered, but clearly illustrated in the Figure) through which a drive shaft 3 projects out of the housing. Washida further teaches an axial face seal with a movable ring 8 (corresponding to the claimed sliding ring) and a counter-ring 6 that, with sealing ring 4, produces a seal between the drive shaft and the housing. As illustrated in the Figure, the counter-ring 6 forms an integral part of the housing.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barbera et al. (DE 3,809,001). Barbera et al. teach a drive shaft 5; a housing 1 having an exit aperture (unnumbered, but clearly illustrated in the Figure) through which the drive shaft projects; an axial seal with a sliding ring 8 and coating 9 (corresponding to the claimed counter-ring) that forms a seal between two components. As illustrated in the Figure, the coating 9 is integral with the component, and the sliding ring has a groove on the bearing surface that contacts the coating.

While Barbera et al. do not explicitly teach that the axial seal is formed between the drive shaft and the housing, one of ordinary skill in the art would have known to place a seal between the two components to reduce the possibility of fluid leaking out of the housing and reducing the overall performance of the pump.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


- Fujii et al. (6,544,004) teach a seal structure substantially the same as that claimed in the instant invention. However, the publication date is not valid.
- Yamada et al. (US 2003/0098547 A1) teach a seal structure comparable to that in the instant invention. The publication date is not valid.
- Klosterman et al. (5,938,206) teach a counter-ring integral with a cover plate.

Contact Information

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl J. Tyler whose telephone number is 703-306-2772. The examiner can normally be reached on Monday-Thursday, 6:00 - 10:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine R. Yu can be reached on 703-308-2675. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9302.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.


Cheryl J. Tyler
Primary Examiner
Art Unit 3746

CJT
December 3, 2003